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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,363	03/04/2002	Takashi Hashimoto	027260-518	2704

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EXAMINER

FUREMAN, JARED

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 02/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/086,363	<b>Applicant(s)</b> HASHIMOTO ET AL.	
	<b>Examiner</b> Jared J. Fureman	<b>Art Unit</b> 2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 14-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6/12/03 & 7/23/03
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

Receipt is acknowledged of the IDS and preliminary amendment, filed on 6/12/2003, and the IDS, filed on 7/23/2003, all of which have been entered in the file. Claims 1-16 are pending.

#### ***Specification***

1. The disclosure is objected to because of the following informalities: On page 1, lines 15 and 17: "Fig. 1" should be replaced with --Fig. 14--, since the conventional device is shown in figure 14 rather than figure 1.

Appropriate correction is required.

#### ***Claim Objections***

2. Claims 6 and 14-16 are objected to because of the following informalities:

Claim 6, line 3: --a-- should be inserted after "keeping".

Claim 14, line 2: "comprises" should be replaced with --comprising--.

Claim 15:

Line 1, "An" should be replaced with --A--.

Line 2, "comprises" should be replaced with --comprising--.

Line 11, "he" should be replaced with --the--.

Claim 16:

Line 2, "comprises" should be replaced with --comprising--.

Line 13, "step-shaped" should be replaced with --strip-shaped--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 7, 9, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Hirose et al (US 2002/0057884 A1).

Hirose et al teaches an optical fiber holding device, comprising: an optical fiber (12); a strip-shaped member (cover 35), having a rectilinear groove (see figure 1) in which the optical fiber is accommodated, and a gel substance (a resin) contacting with the optical fiber is filled; and a substrate on which the optical fiber and the strip-shaped member are mounted (while the substrate is not shown, the module 10 is intended to mounted to a substrate via pins 32); wherein the optical fiber is not contacted with a wall surface of the groove of the strip-shaped member (the optical fiber is supported by the resin within the groove); wherein the gel substance includes a silicon compound (the resin is a silicon resin); wherein the strip-shaped member is made of quartz (the housing may be made of silica glass, see the last sentence of paragraph 42, thus suggesting quartz); wherein a positioning mark is provided on the substrate (the substrate will have through-holes or pads for mounting the pins 32, thus serving as

positioning marks), which is used for positioning the strip-shaped member on the substrate (see figures 1-3 and paragraphs 40-42).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5, 8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirose et al in view of the admitted prior art.

Hirose et al teaches an optical fiber holding device, comprising: an optical fiber (12); a heater (heater module 20) for heating the grating to a predetermined temperature distribution; a strip-shaped member (cover 35), having a rectilinear groove in which the optical fiber is accommodated (see figure 1), and a gel (a resin) substance contacting with the optical fiber is filled; and a substrate on which the optical fiber and the strip-shaped member are mounted (while the substrate is not shown, the module 10 is intended to mounted to a substrate via pins 32); wherein the optical fiber is not contacted with a wall surface of the groove of the strip-shaped member (the optical fiber is supported by resin within the groove); wherein the gel substance includes a silicon compound (the resin is a silicon resin); wherein the strip-shaped member is made of quartz (the housing may be made of silica glass, see the last sentence of paragraph 42, thus suggesting quartz); wherein a positioning mark is provided on the substrate (the substrate will have through-holes or pads for mounting the pins 32, thus serving as

positioning marks), which is used for positioning the strip-shaped member on the substrate (see figures 1-3 and paragraphs 40-42).

Hirose et al fails to specifically teach the optical fiber having a grating; wherein the optical fiber is contacted with the heater.

The admitted prior art teaches an optical fiber (1) having a grating (2); wherein the optical fiber is contacted with a heater (3) (see figure 14 and page 1 lines 17-26 of the specification).

In view of the admitted prior art's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Hirose et al, the optical fiber having a grating; wherein the optical fiber is contacted with the heater, in order to provide compensate for the wavelength dispersion of a number of optical signals propagated through the optical fiber, and to provide a direct heat transfer between the heater and the optical fiber.

7. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirose et al as modified by the admitted prior art in view of Lauzon et al (US 5,671,307, cited by applicant).

Re claim 6: The teachings of Hirose et al as modified by the admitted prior art have been discussed above.

Hirose et al as modified by the admitted prior art fails to specifically teach a Peltier element for keeping a temperature level of the predetermined temperature distribution of the grating at a predetermined level; and a temperature sensor for detecting the temperature of the optical fiber used to control the Peltier element.

Lauzon et al teaches an optical fiber holding device, including: an optical fiber (1) having a grating (2); and a Peltier element (6, 7, 10, and 11) for keeping a temperature level of the predetermined temperature distribution of the grating at a predetermined level; and a temperature sensor (thermistor 22 and thermoelectric control unit 24) for detecting the temperature of the optical fiber used to control the Peltier element (see figure 1 and column 2 line 48 - column 3 line 38).

In view of Lauzon et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Hirose et al as modified by the admitted prior art, a Peltier element for keeping a temperature level of the predetermined temperature distribution of the grating at a predetermined level; and a temperature sensor for detecting the temperature of the optical fiber used to control the Peltier element, in order to provide accurate control of the heater.

Re claim 13: The teachings of Hirose et al as modified by the admitted prior art and Lauzon et al have been discussed above. The system as taught by Hirose et al as modified by the admitted prior art and Lauzon et al necessarily includes optical circuitry for inputting an optical signal to the grating and for outputting the optical signal reflected on the grating, since each of the inventions as taught by Hirose et al, the admitted prior art, and Lauzon et al is designed to be used with optical circuitry.

***Allowable Subject Matter***

8. Claims 14-16 would be allowable if rewritten or amended to overcome the claim objections set forth in this Office action.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, taken alone or in combination, fails to teach or fairly suggest a method of manufacturing an optical fiber holding device as recited in claims 14-16. Specifically, re claim 14: the steps of filling the gel substance in the groove or the strip-shaped member; accommodating the optical fiber in the groove of the strip-shaped member in which the gel substance is filled; mounting the strip-shaped member in which the gel substance is filled and the optical fiber is accommodated on the substrate on which the heater is mounted; and moving the strip-shaped member on the substrate so as to carry out a positioning of the groove with respect to the heater; re claim 15: the steps of securing the strip-shaped member on the substrate on which the heater is mounted; filling the gel substance in the groove of the strip-shaped member secured on the substrate; inserting and accommodating the optical fiber in the groove of the strip-shaped member in which the gel substance is filled; and moving the optical fiber on the heater so as to carry out a positioning of the grating with respect to the heater; and re claim 16: the steps of mounting the optical fiber on the heater which is mounted on the substrate; coating the optical fiber mounted on the heater with a gel substance; mounting the strip-shaped member on the substrate and accommodating the optical fiber in the groove of the strip-shaped member; and moving the strip-shaped member on the substrate so as to carry out a positioning of the grating with respect to the heater.

While the admitted prior art teaches adjusting the optical fiber relative to the heater using positioning marks (see page 1, line 28 - page 2, line 20 of the



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specification), without the benefit of applicant's teaching, there is no motivation for one of ordinary skill in the art at the time of the invention to combine the prior art of record in a manner so as to create the claimed invention.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jeong et al (US 2003/0081926 A1), Dautartas et al (US 2002/0181880 A1), Matsumoto et al (US 2002/0097974 A1), Hirose et al (US 6,618,539 B2), Goto (US 6,553,173 B1), So (US 6,477,309 B2), Sellers (US 5,692,089), Chande et al (US 4,744,627), Baldwin et al (US 2003/0133656 A1), Hu et al (US 2002/0106157 A1), Hashimoto et al (US 2003/0123800 A1), Hashimoto et al (US 2003/0123797 A1), and Kakii et al (JP 63-56616 A) all teach optical fiber holding devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared J. Fureman whose telephone number is (571) 272-2391. The examiner can normally be reached on 7:00 am - 4:30 PM M-T, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

January 25, 2004

*Jared J. Fureman*  
Jared J. Fureman  
Art Unit 2876